you sexually active?; If no, please indicate which option best describes the reason - pain, restricted movement, decreased libido, NA or other; If yes, does your joint problem affect your sexual health - not at all, mildly, moderately, severely, extremely; If yes, please indicate which option best describes the reason that it is affected - joint pain, restricted movement, decreased libido, NA or other. The prevalence of patients whose problematic knee/hip impeded their sexual health was reported and the reason for the discomfort was provided. The two groups are compared using the two tail t-test for normal distributed data, Mann-Whitney test for non-normal data and the chi square test for categorical data. Each group's responses to the sexual activity questions was also described and stratified by current marriage status (civil state).

Results: The TKR and THR groups had similar median (IQR) ages of 70.1 (60.5, 75.8) years and 68.2 (60.8, 75.67) years and body mass index (BMI) 29.3 (26.4, 33.9) and 28.8 (25.6, 31.5). THR's had a slightly higher proportion of females (63.4%) than the TKR group (59.6%). Both groups had similar proportions married, 63.3% for THR and 64.4% for TKR. However the proportion of patients sexually inactive in each group was significantly different, 55.0% for TKR and 69.2% for THR, p=0.043. Of the TKR patients 3 (4.4%) reported that this was due to limited range of motion but none due to pain. In THR patients the figures were 8 (16.3%) and 5 (10.2%) respectively. In those who were sexually active, only 20.7% of TKR and 16.7% of THR reported that the arthritis did not affect their sexual function and 12% and 29.6% reported severe or extreme restriction (fig. 1).

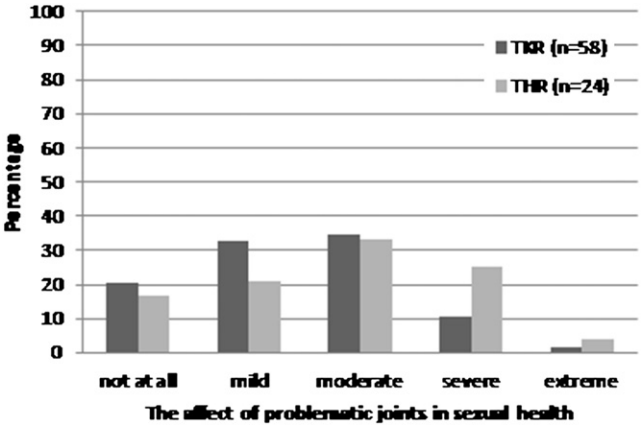

Figure 1 The affect of problematic joints in sexual health

Conclusion: Sexual activity is limited in patients with hip and knee arthritis awaiting joint replacement surgery. Patients with hip arthritis were less sexually active and reported more restriction in activity due to their arthritis than knee patients. This subject is deserving of more research and education for patients.

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IBALANCE OSTEOTOMY IN EARLY TREATMENT OF OSTEOARTHRITIS.

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Purpose: High tibial knee realignment, has proven to be successful for the relief of knee pain caused by unicompartmental osteoarthritis of the knee and also is an accepted standard procedure used to realign the knee due to medial osteoarthritis. Aim of this study was to evaluate this novel osteotomy technique concerning clinical results and safety aspects.

Methods: Thirty-four (34) patients with medial compartment osteoarthritis and varus malaligment, were included for this technique, and evaluated prospectively for 3,5 year. A standardized surgical technique and rehabilitation protocol was used for all patients who received an iBalance MOW-HTO.

Results: Data analysis were completed on Statisitca software Repeated measures of ANVOA and post hoc analysis (Tukey test) was performed. All results showed statistically significance. (p<0,05). The iBalance PEEK implants remained stable in the osteotomy and there were no signs of peri-implant resorption around the iBalance implant. KOOS Knee survey data showed that all iBalance patients experienced a significant improvement in knee pain and physical functioning after the surgery.

Conclusions: The iBalance System addresses these needs by providing a standardized, precise and repeatable procedure and simple approach to promote successful knee osteotomy and bone healing. It also maintain the desire correction with very good clinical results and significant improvement of quality of life and daily life activity.

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CARTILAGE THICKNESS AND CHONDROCYTE DENSITY IN THE HUMAN OSTEOARTHRITIC KNEE

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Purpose: Osteoarthritis (OA) is the most prevalent joint diseases and cartilage loss is a central event in pathogenesis. The degree of cartilage damage varies substantially in specific locations within the joint and this may depend on the degree mechanical and chemical stress. Moreover, there are similar regional variations in chondrocytes. However, the relationship between changes at the tissue and cellular level to the degree of exposure to mechanical load requires further investigation. The purpose of this study was to compare cartilage thickness and cellularity in a site-specific pattern in the femoral cartilage and to related these changes to mechanical stress based on the knee alignment.

Methods: Cartilage explants were taken from 8 patients who received total knee arthroplasty. The average age was 74.7 years and all patients had varus knee deformity. Cartilage explants were harvested from 6 locations on medial and lateral femoral condyle of anterior, middle and posterior side (Figure 1). Cartilage thickness of these explants was measured from surface to subchondral bone and the chondrocyte number and cell formation were determined by using H.E. staining. Immunohistochemical analysis was also performed for the progenitor cell marker STRO-1.

Results: Cartilage thickness was significantly decreased in medial middle and posterior condyle rather than lateral. The number of chondrocytes was lowest in medial middle condyle, which shows the most severe cartilage damage and is most affected the abnormal mechanical stress due to varus knee deformity. Chondrocyte clusters were located especially around degenerative area in the thin cartilage of medial condyle, whereas single chondocyte was located in thick cartilage of anterior to posterior lateral condyle. Additionally, STRO-1 was expressed by many cluster chondrocytes but only in a few single cells.

Conclusions: Abnormally increased mechanical load due to varus deformity is associated with cartilage degradation in the medial concyle. Interestingly, the tissue damage caused by mechanical stress activates a cellular response that leads to proliferation of STRO-1 positive progenitor cells and cluster formation. On the other hand, thick non-degenerated cartilage in the lateral compartment that experiences reduced load due to varus deformity shows low density single chondrocytes that appear to have reduced proliferative and biosynthetic activity (Figure 2). Appropriate mechanical stress appears critical for maintaining cartilage homeostasis and early restoration of normal mechanical load in both compartments of the knee may prevent cell and tissue damage.

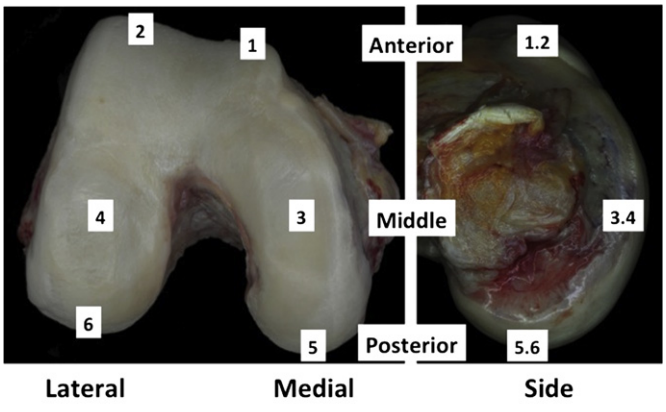

Figure 1: Location of Cartilage Explants

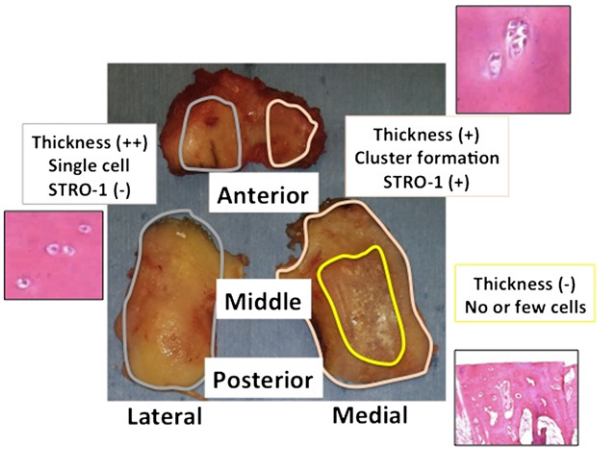

Figure 2: Cartilage Thickness and Chondrocyte Characteristic in Varus Knee

Clinical Trials

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THE CLINICAL EFFECTIVENESS OF JOINT PROTECTION EDUCATION AND EXERCISES IN HAND OSTEOARTHRITIS (OA)

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Purpose: This multicentre 2x2 factorial randomised controlled trial compared; the effectiveness of joint protection education with no joint protection; and the effectiveness of hand exercises with no exercises.

Methods: Participants aged 50 years and over from 5 general practices in North Staffordshire and Cheshire, UK, were mailed a screening questionnaire (n=12,297). Those fulfilling the trial eligibility criteria were invited to attend a clinical assessment for a further eligibility screen for the presence of hand or thumb base OA (ACR clinical criteria). Participants giving informed consent were randomised (with allocation concealment) using computer generated permuted blocks stratified by GP practice, to one of four treatment interventions (leaflet and advice alone; joint protection education; hand exercises; or joint protection education and hand exercises combined). Participants with inflammatory arthritis were excluded. The interventions were delivered by occupational therapists (OTs) to groups of 4-6 participants in 4 sessions over 4 weeks. The primary outcome measure was the OARSI/OMERACT responder criteria combining hand pain and disability (measured using the AUSCAN) and global improvement at 6 months post-randomisation (primary end point). Secondary outcomes included grip strength, arthritis self-efficacy for pain and EUROQoL EQ-5D. Outcomes were collected blind to treatment allocation and were measured at 0, 3, 6 and 12 months. The main analysis was on an intention to treat basis after adjusting for key baseline covariates and imputation of missing data.

Results: Of 257 participants randomised (mean age (SD) 66 (9.1) yrs; Female 66%) there was 85% follow up at 6m (n=212) (90% at 3m; 85% at 12m). Recruitment was balanced across the groups (no joint protection n = 130, joint protection n = 127; no hand exercises n = 127, hand exercises n = 130). Of those randomised to OT classes, 72% attended at least 3 sessions. At 6m, 32% were classed as responders to joint protection and 19% to no joint protection (p=0.02); 28% were responders to hand exercises and 22% to no hand exercises (n.s.). There were no statistically significant differences in responder criteria at 3m or 12m. There were no consistently statistically significant differences in any of the secondary outcome measures at any time point, with the exception of self-efficacy for pain where differences favoured joint protection compared with no joint protection (3m, p=0.01; 6m, p=0.008; 12m, p=0.06). No adverse treatment events were reported.

Conclusion: A four-week programme of joint protection provided for older adults with hand OA afforded improvements in symptoms at 6-months only and self-efficacy at each follow-up time-point. However, no affect on symptoms was seen for the hand exercise programme. The cost effectiveness of these interventions can now be determined and findings will add to the current evidence base for supporting self-management of hand OA.

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KNEE JOINT SPACE WIDTH PROGRESSION: RESULTS OF A 3.3 YEARS RANDOMIZED, DOUBLE BLIND CLINICAL TRIAL WITH HYALURONIC ACID. THE AMELIA PROJECT.

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Purpose: To study the capacity of hyaluronic acid to reduce the progression of knee osteoarthritis based on changes in Joint Space Width (JSW) within the scope of the AMELIA (Arthrosis Modifying Effects of Long-term Intra-articular Adant®) project.

Methods: Patients with primary knee osteoarthritis (ACR criteria), radiological grades II-III according to Kellgren scale and joint space width >=2 mm were randomised 1:1 to receive 4 cycles of 5 intra-articular Adant® or placebo injections each during a study period of 40 months. OMERACT-OARSI 2004 responder criteria were used for efficacy evaluation. Knee X-Rays were obtained using a modified protocol of metatarsophalangeal (MTP) positioning at baseline and at month 14, 27 and 40 by technicians previously trained. X-Rays were sent to a central laboratory where they were assessed for quality. If necessary, repeated X-rays were requested. Approved films were digitalized and read in triplicate in a blind manner by the same trained reader through the study with a semi automated computer assisted system following a standardized procedure (EULAR 2004). The reliability of the method was confirmed before the beginning of the study and it was reassessed at the end.

Results: Out of the 203 patients completing the study procedures, 183 patients had X-rays at both the beginning and the end of the study. Both groups were comparable at baseline in terms of OA characteristics (Table 1). Out of the 203 patients completing the study procedures, 183 patients had X-rays at both the beginning and the end of the study. Globally, the analysis of JSW reduction did not demonstrate differences between both groups (p=0.77). However, radiographic progression was significantly lower in OMERACT-OARSI responders than in non responders, independently of the group they were randomized (0.51 vs 0.73 mm).

A post hoc analysis was performed in a group of 55 patients with baseline JSW >=4mm (Nevitt et al, 2007). In spite of the small sample size, it was observed that clinical improvement (OMERACT-OARSI 2004) in Adant® patients is statistically associated with a lower reduction of JSW which is not detected in placebo group (p=0.027). (Figure 1)

Conclusions: Globally, no differences in radiographic progression were detected between groups.

In the subset of patients with preserved JSW at baseline (≥4mm), a smaller reduction of JSW was observed in the OMERACT-OARSI responders treated with Adant®. This correlation was not observed in placebo patients. These promising results deserve further research adequately powered.